Metals in soil/sediments and wastes

The ODEQ laboratory corrects sample concentrations for the sample weight, sample volume, dilution and percent solids, however they do not correct reporting limits to provide sample quantitation limits (SQLs) and do not include corrected reporting limits (SQLs) for analytes which were detected.

The following formula was used to calculate SQLs for each analyte in the soil, sediment and waste samples:

$$SQL = \frac{\text{Reported lab RL for aqueous (ug/L) x Final volume of digestate (L) x Sample dilution}}{\text{Sample weight (gm) x \% Solids}}$$

Data in the reports for the June 2011 samples indicate that 1 gram of soil was digested with a final volume of 52 ml (0.052 L), and that the digestates were diluted by a factor of 10.

Data in the reports for the December 2011 samples indicate that 1 gram of soil was digested with a final volume of 50 ml (0.050 L), and that the digestates were diluted by a factor of 10.

No information was included regarding the digestion of the June 2010 samples. The data report sheets indicated that the analysis was conducted using method 6010, therefore the same conditions used for the December 2011 samples were used.

Mercury in soil/sediments and wastes

Reporting limits were not corrected for % solids in the samples and have been recalculated using the formula below:

$$SQL = \frac{\text{Reported lab RL for aqueous (ug/L)}}{\text{\% Solids}}$$

Volatile and semi-volatile organics

As with metals, the ODEQ laboratory does not provide reporting limits for detected analytes in their data package.

For the June 2010 samples, no data is provided regarding the sample weight extracted/analyzed, final volumes of extract, or sample dilutions. The laboratory calculates and reports a correction factor for each sample incorporating this information and this value is used to calculate a SQL for these samples.

For the June 2011 and December 2011 samples (semi-volatiles only analyzed), data for sample conditions were provided and SQLs were calculated using the formula used for metals.

Sample 505879 was reported at a 5X dilution, and samples 505880 and 505881 were analyzed at a 10X dilution, as verified by examination of raw data included for these samples.

Minor variations were noted in the SQLs/reporting limits reported by the lab for samples 505872, 505889, 505990, 505994 and 505996 as compared to the values calculated by the reviewer. All of these deviations are attributable to rounding differences between the review spreadsheet and the laboratory.